

CLAIMS

What is claimed is:

1. An interconnection device comprising:

first and second outer layers, each including substrate material; and

at least one inner layer disposed between said first and second outer layers, said inner layer including at least one conductive trace disposed on substrate material proximate to an edge of the printed wiring board and being accessible for direct electrical connection.

2. The interconnection device of claim 1 wherein said conductive inner layer trace extends outward from the edge of the printed wiring board.

3. The interconnection device of claim 1 wherein at least a portion of said first outer layer is removed to provide access to said conductive inner layer trace.

4. The interconnection device of claim 1 wherein at least one conductive protrusion is formed on said conductive inner layer trace.

5. The interconnection device of claim 4 wherein said protrusion is malleable.

6. The interconnection device of claim 4 wherein said protrusion is resilient.

7. The interconnection device of claim 1 further comprising a guide plate secured against at least one of said outer layers.

8. The interconnection device of claim 7 further including at least one alignment pin disposed on said guide plate, said guide plate further including a slot for receiving an alignment pin associated with a second guide plate associated with a second interconnection device.

9. The interconnection device of claim 8 wherein said at least one alignment pin is disposed in a hole formed through said guide plate and said outer layers.

10. The interconnection device of claim 9 further including at least one spring member that interlocks with at least one of said alignment pins and is operative to facilitate keeping said interconnection devices in contact with each other.

11. The interconnection device of claim 10 further including at least one retaining member that interlocks with at least one of said alignment pins.

12. The interconnection device of claim 1 wherein said inner layer substrate material is a ceramic.

13. The interconnection device of claim 1 wherein said inner layer substrate material is organic.

14. The interconnection device of claim 1 wherein said at least one conductive trace is a signal trace, and further including first and second shielding traces disposed on said inner layer substrate such that said signal trace is disposed between said first and second shielding traces.

15. The interconnection device of claim 14 further including grounded shielding disposed above and below said inner layer signal trace.

16. The interconnection device of claim 15 further including first and second grounded shielding members disposed such that said signal trace is disposed between said first and second shielding members, and further such that said first and second shielding members intersect said inner layer and layers above and below said inner layer.

17. An assembly that facilitates interconnection of first and second printed wiring boards, comprising:

a guide plate having at least one surface formed to receive at least a portion of one edge of the printed wiring board; and

at least one fastening member for securing the printed wiring board to said guide plate.

18. The assembly of claim 17 wherein said at least one fastening member includes at least one alignment pin that may be disposed in an opening formed on said guide plate.

19. The assembly of claim 18 wherein said guide plate includes a slot for receiving an alignment pin associated with a second guide plate associated with a second interconnection device.

20. The assembly of claim 19 further including at least one spring member that interlocks with at least one of said alignment pins and is operative to facilitate keeping said interconnection devices in contact with each other.

21. The assembly of claim 20 further including at least one retaining member that interlocks with at least one of said alignment pins.

22. An electronic device having multiple printed wiring boards, comprising:

a first printed wiring board;

a first interconnect card attached to said first printed circuit board by a flexible substrate that includes at least one conductive trace routed between said first printed wiring board and said first interconnect card, said conductive trace being disposed on an inner layer of said first interconnect card and having at least one exposed portion;

a second printed wiring board; and

a second interconnect card attached to said second printed wiring board by a flexible substrate that includes at least one conductive trace routed between said second printed wiring board and said second interconnect card, said conductive trace being disposed

on an inner layer of said second interconnect card and having at least one exposed portion,

wherein said exposed portion of said conductive trace on said first interconnect card is in physical contact with said conductive trace on said second interconnect card.

23. The device of claim 22 wherein said first printed wiring board is disposed in a non-parallel plane relative to said second printed wiring board.

24. The device of claim 23 wherein said first interconnect card includes a guide plate having at least one surface formed to receive at least a portion of one edge of the first interconnect card; and at least one fastening member for securing the first interconnect card to said guide plate.

25. An electronic device having multiple printed wiring boards, comprising:

a first printed wiring board with a first substrate that includes a first conductive trace having at least one exposed portion; and

a second printed wiring board with a second substrate that includes a second conductive trace having at least one exposed portion,

wherein said exposed portion of said first conductive trace is in direct physical contact with said exposed portion of said second conductive trace.

26. The device of claim 25 wherein said first substrate is rigid and said second substrate is flexible.

27. The device of claim 25 wherein said first substrate is ceramic and said second substrate is organic.

28. The device of claim 25 wherein said first conductor is stripline and said second conductor is microstrip.